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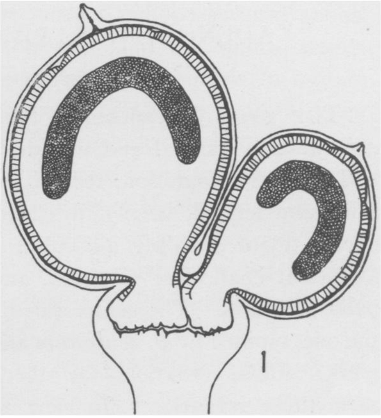
BRIEFER ARTICLES.

POLYEMBRYONY IN SPHAGNUM.

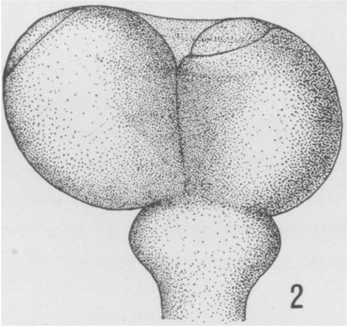
(WITH THREE FIGURES)

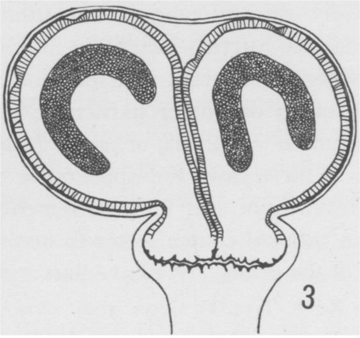
DURING July 1904, while collecting sporophytes of Sphagnum for class use, the writer discovered the peculiar specimens described in this note. The particular species of Sphagnum has not been determined, but it is a large variety which grows abundantly in the swamps around Tower, Minnesota.



Among the thousands of sporophytes handled, five cases were found where in two archegonia at the end of the same branch the oospheres had been fertilized and each oosperm had developed into a normal sporophyte. In these specimens each capsule was enclosed by its separate calyptra and the haustra of each two sister sporophytes were inserted side by side in the bulbous end of the pseudopodium (*fig. 1*).

Two cases were also found where two sporophytes had developed in the venter of one archegonium (*fig. 2*). They were more or less distorted and modified by mutual pressure, but each presented the essential structure of a normal sporophyte (*fig. 3*). When studied in sections, the tissue of





each sporophyte appeared to be entirely independent of that of its twin except in the loose tissue forming the base of the haustra, where the line of separation was not clearly recognizable in all sections. In the region of contact, the epidermis, while quite distinct, was less strongly developed than on the free faces. Since the sporophytes were nearly mature at the time of collection, it was impossible to determine the conditions which led to the production of twins. It is probable that two functional oospheres were produced in the venter of each archegonium, although it is not impossible that twinning took place through an early branching of the young protocorm.—HAROLD L. LYON, *University of Minnesota.*

ADENODERRIS, A VALID GENUS OF FERNS.

(WITH TWO FIGURES)

THE genus Polystichum,[1] typified by the well-known *P. Lonchitis* constitutes a natural and well-defined group of ferns and has commonly had general recognition, recently even by American writers.[2] Its species are characterized, briefly, by their rigidity and erect habit, smooth firm dryish texture, mainly auriculate and spinulose or mucronate divisions, abundant chaff, free venation, and ordinarily by the orbicular centrally peltate indusia. The genus was divided by JOHN SMITH into two sections: the one, typified by *P. aculeatum* and *P. Lonchitis*, with fasciculate generally erect acaulose vernation; the other, typified by *P. coriaceum*, with uniserial sarmentose vernation. In view of that writer's natural bent for generic segregation along the very lines on which the species of this genus were placed in two sections, it would not have been surprising if he had accorded to each section generic rank. That such a disposition—in view of the two radically different types of vernation—was not made is significant, for it emphasizes SMITH's belief that in other respects the species are in too close agreement to warrant their division into two genera. There is, however, variation in one other particular; in certain species of both groups the indusium is caducous, or, as in *P. tenue*,[3] apparently quite wanting; but even in these cases the appearance of the plants is so unmistakably that of Polystichum and their agreement in the main particulars so essential that a rational course seems to necessitate their recognition as true members of the genus. We have thus a group of species which, though offering

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[1] ROTH, Teut. Fl. Germ. **3**:69. 1800.

[2] GILBERT, in papers presented at the Boston Meeting (1898), 22. 1899. UNDERWOOD, Our native ferns, ed. 6, 115. 1900. DAVENPORT, Rhodora **4**:9. 1902, etc.

[3] GILBERT, Fern Bull. **8**:63. 1900.